CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH
GILES S. PORTER, M.D., Director

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Regulations Governing Use of Sewage for Crop Irrigation Purposes

Adopted May 27, 1933, under the provisions of the Public Health Act, and General Law.

NOTE.—Attention is called to the fact that the disposal of sewage, sewage effluent or sludge for irrigation or fertilizing purposes requires the holding of permit therefor, issued by the State Board of Public Health under the Public Health Act, to the city, town, district, firm or person owning or operating the sewer system. Users of the sewage, effluent or sludge are, however, liable as agents, for the violation of such permit or the Public Health Act. Sale or disposal of any crop dangerous to the public health is subject to various other State health laws. Rules governing the crops which may or may not be watered or fertilized by sewage, effluent or sludge, are as follows:

Rule 1. *Raw Sewage.* Raw, i. e., untreated, sewage containing human excrement shall not be used for irrigating growing crops. Use of bar screens, grit, or detritus tanks is not to be considered as sewage treatment under these regulations.

Rule 2. *Raw or Undigested Sludge.* No sludge or screenings shall be distributed or used for fertilizing any growing vegetables, garden truck or low growing fruits or berries, unless the sludge or screenings shall have been rendered innocuous and free of danger of spreading disease by such measures as (a) kiln drying, (b) bed drying or ageing in storage, and in either case for not less than 30 days (c) conditioning or treating to the satisfaction of the State Department of Public Health, (d) digestion to a point where the sludge or screenings is practically odorless, drains readily and not over 50 per cent of the total solid matter is in the volatile form.

Rule 3. *Settled or Undisinfected Sewage Effluents.* Effluents of septic tanks, Imhoff tanks or of other settling tanks, or partially disinfected effluents of sprinkling filters or activated sludge plants or similar sewages, shall not be used to water any growing vegetables, garden truck, berries, or low-growing fruits such that the fruit is in contact with the ground, or to water vineyards or orchard crops during seasons in which the windfalls or fruit lie on the ground. Such sewage, effluents or any sludge or screenings shall not be permitted in ditches or pipes which may be used to irrigate vegetables, garden truck, berries, or low-growing fruit.

Nursery stock, cotton, and such field crops as hay, grain, rice, alfalfa, fodder corn, cowbeets, and fodder carrots may be watered with such settled or undisinfected or partially disinfected sewage effluents provided that no milch cows are pastured on the land while it is moist with sewage, or have access to ditches carrying such sewage.

Rule 4. *Oxidized Effluent Highly Disinfected or Otherwise Treated for Bacterial Removal.* The foregoing restrictions do not apply against the use of well oxidized nonputrescible, and reliably disinfected or filtered effluents which always meet the following bacterial standard: in any 20 consecutive samples, from which five 10 c.c. portions each are examined, not over ten portions shall be positive for members

of the Coli-aerogenes group, and in no single sample shall over half the .1 c.c. portions of the sample of the effluent be positive for the above organisms. Samples shall be analyzed according to the latest Standard Methods of Examination of Water and Sewage of American Public Health Association.

The works and methods used for the production of such oxidized and disinfected effluent must be correctly adapted to the purpose and designed with adequate factors of safety to produce uniformly, a well-oxidized, odorless and inoffensive effluent, thoroughly filtered, treated or disinfected to meet the above standard.

For example, where disinfection is employed apparatus and equipment for applying disinfecting agent or agents shall be in duplicate throughout, including machines, weighing scales and reserve supply of disinfectant for each machine. The disinfecting agent or agents shall be kept in separate rooms from the metering mechanism to prevent corrosion thereof. Each room shall be provided with a suitable source of heat so as to prevent interruptions of the disinfection in cold weather. Sewage flow shall be measured and flow of the disinfectant regulated to provide an adequate dose of disinfectant at all times. The feed of disinfectant shall provide an excess over actual needs and be divided between two or more metering machines so that interruption in the action of one will still yield the bacterial results prescribed. Appropriate laboratory tests to show that the disinfection is adequate shall be made at frequent intervals and at least twice daily. For such routine bacterial control negative 24-hour presumptive tests for the Coli-aerogenes group in the prescribed dilutions will be recognized as sufficient in the absence of other evidence that the presumptive test is insufficient. Proper records shall be kept of actual operations and results. In short, precautions shall be of an order fully equal to those taken by cities using reliable, modern methods of disinfecting water, obtained from a contaminated source of supply.

Rule 5. *Cross Connections.* No cross connections shall be permitted between any pipe line or works which may contain sewage, sewage effluent or sludge and any pipe line or works to be used for domestic water supply or drinking purposes. Signs warning that the water is not a drinking water should be placed on pipes at ditches, faucets, etc., that may contain any sewage effluent, sewage or sludge.

War is expensive, but not half as expensive as disease—in cash or lives. But war makes a big impression because war is spectacular and is so thoroughly advertised.—H. W. Hill, M.D.

FEWER MOSQUITOES—MORE AND BETTER MILK

An article by Robert B. Van Etten in the Alameda Times-Star states: "You are drinking a higher quality of milk because the Alameda County Mosquito Abatement District has greatly reduced the number of mosquitoes in Alameda County. Dairymen throughout the county report that their cows are giving more milk and that the milk contains a higher percentage of butter fat. The cows are now devoting all their attention to munching grass, instead of wasting energy swishing their tails at irritating, biting mosquitoes."

While malaria is not a problem in Alameda County, for the reason that the anopheles mosquito is seldom found in that county, it is stated that many residents are so constituted that mosquito bites produce illness in them. Children, particularly, may become infected by scratching mosquito bites. The article states that at one of the country clubs, before the mosquito abatement district had begun operations, it was necessary to station a man at the first tee with a large drum of oil of citronella and a spray gun. Everyone who played the course was sprayed on the face, arms and legs with the repellent. In addition, masks of mosquito netting were provided for all women players. Today, however, not a mosquito is to be found in that vicinity. Marksmen at the State rifle range complained, formerly, that it was impossible to aim their rifles properly because a mosquito would invariably sit on the gun sights, which was decidedly distracting. It is said, also, that tennis may now be played at night, which heretofore was impossible because of the hordes of mosquitoes that prevailed.

Twenty-nine hundred acres of marsh which have not yet been drained will be drained as soon as sufficient funds become available. At the present time this acreage is controlled by means of oiling—a more expensive procedure, over a period of years, than is drainage. The existing drainage ditches and sloughs must also be kept from filling up with silt; they must be cleared regularly of weeds and grass which otherwise would afford sufficient protection that mosquitoes might breed even in the drainage ditches.

The Alameda County abatement district covers a total area of approximately 320 square miles and is the largest mosquito abatement district in the State. It includes most of Alameda County. Harold F. Gray is the engineer of the district and Professor W. B. Herms of the University of California is a trustee. These two men conducted the operations of the first antimalaria mosquito abatement work that was done in California. This was accomplished in Placer County in 1910.

EXTENSION CLASSES TO OPEN

The University of California Extension Division which last year provided evening and day classes in a wide variety of subjects for more than 30,000 people has just announced that more than 250 new classes of instruction will be started in the San Francisco Bay region during the months of August and September.

"There is no requirement for admission to a class other than the ability to pursue the work with profit," states Professor Leon J. Richardson, Director of Extension.

A new schedule of classes will be available for distribution in August and may be obtained by communicating with one of the offices; in San Francisco, 540 Powell Street; Oakland, 1730 Franklin Street; Berkeley, 301 California Hall.

DR. ROSENAU AND DR. CABOT ADDRESS CALIFORNIANS

Dr. Milton J. Rosenau, of Cambridge, Massachusetts, and Dr. Richard C. Cabot of Boston, are giving courses in the Summer Session of the University of California at Berkeley. Both of these men have addressed many groups of public health and social welfare workers in the San Francisco Bay district.

On July 15, Dr. Rosenau was the guest of the Northern California Public Health Association and the Pasteur Society at a dinner meeting held at the Women's Faculty Club on the University of California campus. He addressed the group upon the subject of epidemic typhoid fever.

TICKS AS VENDORS OF DISEASE

Various types of ticks are responsible for the transmission of many severe and highly fatal diseases. It is probable that, during the present summer season, more individuals have been exposed to ticks than is usual at this time of year. Large numbers of camping parties are seen in the mountain forests this season and thousands of young men are employed in the Civilian Conservation Corps camps. It is doubtful that any other insect at the present time disseminates more serious and disastrous diseases than does the tick. Among such diseases are relapsing fever, Rocky Mountain spotted fever, tularemia, and other less well-known but equally disastrous diseases.

Individuals who visit the recreational areas of the State should exercise every precaution against invasion by ticks. An article in a recent issue of the Weekly Bulletin gave specific instructions relative to the best methods that might be employed in preventing such invasions.

SAN DIEGO HEALTH DEPARTMENT CELEBRATES

July 5, 1933, was the fifty-seventh anniversary of the establishment of the San Diego City Health Department. In 1876, when the local board of health was created, San Diego was a village of two thousand persons. The newly organized board of health was confronted with a number of serious problems. Communicable diseases, particularly smallpox, were widely prevalent. General sanitation demanded attention, as well as the community water supply. Many problems were involved with reference to the proper handling of whales at the old whaling station, La Playa, on Point Loma. In those days this was one of the major whaling stations on the Pacific Coast. The old records reveal that those who were engaged in the business were lax in exercising proper methods for disposing of the huge creatures. The prevailing west winds carried unpleasant odors to the residents of San Diego.

The growth of this city from a village of 2000 persons in 1876 to 167,000 in 1933 has brought increased problems in public health administration, but this community has developed a strong organization and provided funds to safeguard the public health in a most commendable manner under the direction of Dr. Alex M. Lesem.

ROCKY MOUNTAIN SPOTTED FEVER CASES REPORTED

Thirteen cases of Rocky Mountain spotted fever have been reported in California this year up to July 1, two of which cases have proved fatal. The source of three of these cases was in Nevada, while the remaining ten cases were contracted in Modoc and Lassen counties.

This disease, which is endemic in the northwestern States—particularly in Montana, Idaho, eastern Oregon, northwestern California and western Nevada—is a serious and highly fatal disease. It is spread by certain ticks. A vaccine suitable for administration to individuals who may be exposed to ticks is now available and may be obtained through the laboratory of the U. S. Public Health Service at Hamilton, Montana. Physicians may secure this vaccine by communicating with the laboratory.

NEW HEALTH OFFICER IN SAN BERNARDINO

Dr. W. D. Lenker has been appointed city health officer of San Bernardino, and took over his new duties on June 1, 1933.

MORBIDITY*

Diphtheria

29 cases of diphtheria have been reported, as follows: Los Angeles County 5, Alhambra 1, Glendale 1, Inglewood 1, Los Angeles 15, Whittier 1, South Gate 1, Monterey Park 1, Santa Barbara 3.

Chickenpox

157 cases of chickenpox have been reported. Those communities reporting 10 or more cases are as follows: Berkeley 13, Oakland 14, Los Angeles County 13, Los Angeles 29, San Diego 15.

Measles

347 cases of measles have been reported. Those communities reporting 10 or more cases are as follows: Los Angeles County 45, Long Beach 28, Los Angeles 72, Santa Monica 13, Orange County 13, Riverside County 14, San Diego 46.

Scarlet Fever

76 cases of scarlet fever have been reported. Those communities reporting 10 or more cases are as follows: Los Angeles 21.

Whooping Cough

258 cases of whooping cough have been reported. Those communities reporting 10 or more cases are as follows: Berkeley 14, Oakland 19, Los Angeles County 27, Los Angeles 78, Sacramento 11, Coronado 12, San Francisco 14, Stockton 14.

Smallpox

18 cases of smallpox have been reported, as follows: Bakersfield 1, Alhambra 2, Los Angeles 9, Santa Monica 1, Newport Beach 1, San Diego 1, Santa Barbara 1, San Jose 1, Modesto 1.

Typhoid Fever

9 cases of typhoid fever have been reported, as follows: Compton 2, Los Angeles 1, Riverside County 2, San Joaquin County 4.

Meningitis (Epidemic)

2 cases of epidemic meningitis have been reported, as follows: Los Angeles County 1, San Francisco 1.

Leprosy

One case of leprosy from Santa Cruz County has been reported.

Poliomyelitis

3 cases of poliomyelitis have been reported, as follows: Pomona 1, San Diego 2.

Undulant Fever

7 cases of undulant fever have been reported, as follows: Los Angeles County 1, Los Angeles 3, Pasadena 1, Pomona 1, Newport Beach 1.

Tularemia

One case of tularemia from Monterey County has been reported.

Trichinosis

One case of trichinosis from San Francisco has been reported.

Food Poisoning

One case of food poisoning from San Francisco has been reported.

CHANGES AMONG HEALTH OFFICERS

Dr. W. M. Wilson of Weaverville has been appointed health officer of Trinity County, to succeed Dr. Chas. H. Law.

Dr. A. McArthur has been appointed city health officer of Lincoln, to succeed Mr. F. R. Elder.

Dr. A. C. Atwood has been appointed health officer of Chowchilla, to succeed Dr. H. C. Martin.

Dr. Luther J. Calahan has been appointed health officer of Lake County, to succeed Dr. W. E. Upton.

Immunity is, if you like, an armoring of our modern bodies against our modern germ enemies as ancient knights encased themselves in steel against the slings and arrows of their ancient human enemies. To make the metaphor modern, it is like fireproofing the "temple of the body" against the fires of disease, so that it can not burn; or like putting something in your auto radiator so that it can not freeze. It is, as a method of prevention, the most conclusive that the body itself can of itself provide, and in principle is the most conclusive of any method that can be provided in any way whatever—except the method of abolishing disease entirely, which latter would make immunity unnecessary.—H. W. Hill, M.D.

* From reports received on July 17th and 18th for week ending July 15th.

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